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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,559	02/09/2004	Clifford F. Biddulph	PVOZ 2 00015	8972

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EXAMINER

ZHENG, LOIS L

ART UNIT	PAPER NUMBER
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1793

MAIL DATE	DELIVERY MODE
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04/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/774,559	Applicant(s) BIDDULPH ET AL.	
	Examiner LOIS ZHENG	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8,9 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8,9 and 19-23 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 February 2008 has been entered.

Status of Claims

2. Claims 1 and 19-20 are amended in view of applicant's amendment filed 22 February 2008. Claims 7 and 10-18 are canceled in view of applicant's amendment. Therefore, claims 1-6, 8-9 and 19-23 are currently under examination.

Claim Objections

3. Claim 19 is objected to because of the following informalities: The new claim amendment in lines 15-16 recites a limitation that is already recited in lines 10-11. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 20 recites the limitation "the organic chelate" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6, 8-9 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 02/07902(WO'902).

WO'902 teaches an anticorrosive aqueous acidic coating solution free of hexavalent chromium, wherein the coating solution comprises 0.02mol/l – 0.58mol/l of Cr(III), 0.1mol/l – 0.42mol/l of phosphate ions incorporated from phosphoric acid or sodium phosphate, 0.001mol/l – 0.1mol/l of iron, cobalt and/or nickel ions. WO'902 also teaches that the coating solution comprises one or more citric acid, tartaric acid, malonic acid as complexing agents to complex the Cr(III) ions and to regulate the chrome(III) hydroxide precipitate on the metal surface. The pH of the coating solution is maintained between 1 and 4 by using nitric or sulfuric acids. WO'902 further teaches that the phosphate is favorably added for the formation of a dark conversion coating and iron, cobalt and/or nickel are added for the formation of a black color coating. See last paragraph on page 1 – bottom of page 2 of the translation.

Regarding claims 1-6, 8-9, 19-20 and 22-23, the one or more citric acid, tartaric acid and malonic acid as taught by WO'902 read on the claimed chelate. The nitrate

and sulfate ions from the nitric or sulfuric acid used for pH control as taught by WO'902 read on the claimed sulfate and/or nitrate ions. The iron, cobalt and nickel ions as taught by WO'902 read on the claimed transition metal or metalloid.

In addition, the component concentrations of Cr(III) ions, phosphorous anions, Fe/Co/Ni ions, the pH value ranges and the Cr(III) to Fe/Co/Ni ratio range(i.e. as calculated from the concentrations of Cr(III) ions and Fe/Co/Ni ions) in the coating solution of WO'902 overlap the claimed component concentration ranges, the claimed pH value range and the claimed Cr(III) to transitional metal or metalloid range. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed component concentrations and pH range from the disclosed ranges of WO'902 would have been obvious to one skilled in the art since WO'902 teaches the same utilities in its disclosed component concentration ranges, pH value range, and Cr(III) to Fe/Co/Ni ratio range.

However, WO'902 does not teach the claimed chelate concentration range as recited in instant claims 7 and 19. WO'902 also does not explicitly teach the claimed sulfate and/or nitrate ion concentrations as recited in claims 1 and 19-20.

In addition, the sulfate and carboxylic acid concentration ranges as taught by WO'902 in view of Huvar overlap the claimed sulfate and chelate concentration ranges as recited in claims 1, 7 and 19-20. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed sulfate and chelate concentration ranges from the disclosed sulfate and carboxylic acid concentration ranges of WO'902 in view of Huvar would have been obvious to one skilled in the art since WO'902 in view

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of Huvar teach the same utilities in their disclosed sulfate and carboxylic acid concentration ranges.

With respect to the claimed amounts of organic chelate, the carboxylic acids as taught by WP'902 such as citric acid, tartaric acid, malonic acid are used to complex the Cr(III) ions and to regulate the chrome(III) hydroxide precipitate on the metal surface(page 2 lines 20-24). Therefore, WO'902 teaches that the carboxylic acids such as citric, tartaric and malonic acids are result effective variables. One of ordinary skill in the art would have found it obvious to have varied the concentration of the carboxylic acids in the coating solution of WO'902 via routine optimization in order to perform the desired complexing of Cr(III) and to achieve desired amount Cr(III) hydroxide precipitation.

With respect to the claimed amount of sulfate and nitrate ions, WP'902 teaches that sulfuric and nitric acids are used to control pH of the coating solution. Therefore, the concentrations of sulfate and nitrate ions are result effective variables. One of ordinary skill in the art would have find it obvious to have varied the amount of sulfate and nitrate ions in the coating solution of WO'902 via routine optimization in order to achieve desired pH.

Regarding claim 21, WO'902 teaches that hypophosphite and phosphate can be used to form a dark conversion coating(page 2, middle section). The examiner considers this teaching to meet the limitation of claim 21 since claim 21 uses "consisting essentially of", which is a semi-open transitional phrase that does not exclude any additional elements that do not materially affect the characteristics of applicant's

invention. It is well settled that if an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See also Ex parte Hoffman, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989). See MPEP 2111.03 [R-2]. In this case, it is applicant's burden to provide evidence that the presence of hypophosphite materially changes the characteristics of the claimed coating solution.

9. Claims 1-6, 8-9 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. US 6,719,852 B2(Oshima) in view of WO 02/07902 (WO'902).

Oshima teaches an aqueous acidic coating solution that is free of hexavalent chromium(abstract), wherein the coating solution comprises 0.2-5g/l of trivalent chromium ions(col. 4 lines 14-21), 0.2-10g/l of cobalt ions(col. 4 lines 33-45), 1-50g/l of inorganic salts of nitric or sulfuric acid(col. 4 lines 54-60), 0.1-50g/l of phosphoric acid (col. 4 lines 61-67) and 1-30g/l of carboxylic acids, such as citric acid, tartartic acid, malonic acid and succinic acid (col. 5 lines 1-7) and 0.2-13g/l of oxalic acid(col. 4 lines 27-32). The coating solution of Oshima has a pH of 0.5-4(col. 5 lines 8-10).

Regarding claims 1-6, 8-9, 19-20 and 22-23, the oxalic acid or any of the carboxylic acids listed above as taught by Oshima read on the claimed chelate. The nitrate and sulfate ions from the inorganic salts of nitric or sulfuric acid as taught by

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Oshima read on the claimed sulfate and/or nitrate ions. The cobalt ions as taught by Oshima read on the claimed transition metal or metalloid.

However, even though Oshima teaches various color finishes in its examples (Table 4). Oshima does not explicitly teach that the coating solution can produce a black chromate coating as claimed.

The teachings of WO'902 are discussed in paragraph 8 above. WO'902 further teaches that cobalt, iron and/or nickel in the amounts of 0.001 mol/l and 0.1 mol/l each can be added to promote a black color film(translation, page 2 lines 4-6 from the bottom). Presence of phosphate also helps formation of a dark conversion coating(page 2 lines 25-32). Black pigments such as carbon black in an amount of 5-20g/l can also be added according to WO'902(translation, page 3 two lines after "Day 2").

Therefore, it would have been obvious to one of ordinary skill in the art to have incorporated cobalt, nickel and/iron in a concentration of 0.001-0.1mol/l each and back pigments such as carbon black in an amount of 5-20g/l as taught by WO'902 into the coating solution of Oshima in order to produce a black chromate coating. In addition, WO'902 teaches a coating solution that has significantly the same coating components as the coating solution of Oshima. The teachings of Oshima and WO'902 further show that different coating component concentrations result in different coating colors. Therefore, one of ordinary skill in the art would have found it obvious to have varied the concentrations of the coating components in the coating solution of Oshima in order to achieve a desired coating color such as the black color coating as claimed.

In addition, the component concentrations of Cr(III) ions, phosphorous anions, Co ions, oxalic acid and/or carboxylic acids, Cr(III) ion/Co ion ratio and the pH value in the coating solution of Oshima in view of WO'902 overlap the claimed component concentration ranges and the claimed pH value range. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed component concentrations, Cr(III)/transitional metal or metalloid ion ratio and pH ranges from the disclosed ranges of Oshima in view of WO'902 would have been obvious to one skilled in the art since Oshima in view of WO'902 teach the same utilities in their disclosed component concentration, Cr(III)/Co ion ratio and pH value ranges.

Regarding claim 21, the claimed phosphorous anions consisting essentially of phosphate anions is within the scope of Oshima's invention(col. 4 lines 61-67).

Response to Arguments

10. Applicant's arguments filed 22 February 2008 have been fully considered but they are not persuasive.

Applicant's arguments with respect to the combination of WO'902 and Huvar are moot in view of the new grounds of rejection.

The examiner does not find applicant's argument persuasive because the Huvar reference is incorporated into the teachings of WO'902 for its teaching of adding sulfate for improved passivation. Therefore, the combination of WO'902 and Huvar teaches the claimed sulfate ion in the claimed concentration, which meets the limitation of the amended sulfate and/or nitrate concentrations as amended in claims 1 and 19-20.

Applicant further argues that Oshima differs from the claimed invention because it does not teach that its coating solution produces a black coating. Examples 1-2 of Oshima produce pale blue coatings even though they use 0.2 and 0.5g/l of Co, which are within the range of Co in the coating solution of WO'902 to produce a black coating.

The examiner does not find applicant's argument persuasive. As set forth in paragraph 9 above, the formation of a black conversion as taught by WO'902 is a result of a combination of multiple coating components in suitable ranges, such as phosphate, cobalt, iron, nickel, black pigments, etc. Cobalt as shown in Examples of 1-2 of Oshima is just one of the contributing factors. In addition, WO'902 teaches a coating solution that has significantly the same coating components as the coating solution of Oshima with overlapping coating component concentrations, which result in different coating colors. Therefore, one of ordinary skill in the art would have found it obvious to have varied the concentrations of the coating components in the coating solution of Oshima in order to achieve a desired coating color such as the black color coating as claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

LLZ

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	10/774,559	BIDDULPH ET AL.	
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	LOIS ZHENG	1793	